



VETERINARY VOICE: Tips of the Trade

Emergency and Critical Care: Oleander Toxicosis

What is it? Which parts are toxic?	Ornamental evergreen shrub with leathery, dark green leaves. The flowers are borne in terminal clusters of dark red, pink, white. All parts of the plant are toxic.
Toxins? Clinical signs?	Dried and fresh leaves are highly toxic because they contain cardiac glycosides. The plant can cause sudden death with gastroenteritis and heart failure. Experimentally, oleander is rapidly absorbed. There are reports of dogs dying after only ingesting a few leaves. More commonly, the toxic signs appear 8-24 hours after exposure. Signs of poisoning often begin gastrointestinal effects, such as vomiting or diarrhea. Variable cardiac arrhythmias (1st, 2nd and 3rd degree AV block, junctional escape beats, ventricular escape and premature beats, etc.), anxiety, mydriasis (less common), muscle fasciculations, sweating, obtunded behavior and weakness can also be seen. Clinical signs often worsen over 24 to 48 hours as cardiac glycosides are excreted in bile and reabsorbed via the enterohepatic route. This tends to concentrate circulating toxin and worsen the clinical picture over this time frame. Some sources report the toxic dose to be ~ 30mg/kg but there are reports of dogs dying from ingesting a small as 1 leaf. Fresh material contains saponins that are irritating to mucosa and are rarely ingested voluntarily. Dried leaves are seemingly more palatable and toxicity is not diminished by drying.
Therapy	If early in exposure, vomiting can be initiated (if appropriate). Therapy is largely supportive however, repeat dosages of activated charcoal is likely useful because it may block the enterohepatic circulation of the cardiac glycosides. Specific Fab (Digibind™) cross reacts with oleander glycosides at approximately 100:1 and allows for excretion of the Fab/glycoside in urine. Digibind is expensive and is only recommended when the cardiac arrhythmias are not responding to traditional anti-arrhythmic drugs. Restoration of the N-K-ATPase activity via 1,6 fructose diphosphate may be useful. ECG monitoring and addressing specific arrhythmias as they arise is prudent due to the progressive and variable nature of arrhythmias with this intoxication. Close monitoring of electrolytes, especially potassium is also important.
Prognosis	Many times, animals poisoned with oleander are found dead. In animals that are found and treated, they may still die within hours to several days. If the animals survive the initial insult, there should not be any long term effects.
Questions? Critical Care Experts: Stacy Armstrong, DVM, DACVECCS Heather Connally, MS, DVM, DACVECCS	The Veterinary Specialty Center of Tucson has board-certified critical care specialists available for questions and consultations on emergency conditions 7 days a week. Board-certified critical care specialists have four additional years of training are certified by the American College of Veterinary Emergency and Critical Care to assure competency in advanced veterinary care.